MASK ALIGNER SPECIFICATION: The required instrument shall meet or exceed the following Specifications:

The Mask Aligner shall be designed for high resolution photolithography operating in a class 1000 clean room environment.

The Mask Aligner must be designed to handle shaped substrates of varying thickness, as well a standard size wafers up to 150 mm in diameter. The Contractor shall supply separate tooling to handle both 3 inch and 4 inch diameter wafers. Quick Maskholder and Chuck Changeover for different substrate sizes without tools is required.

The Mask Aligner must be equipped with diffraction reducing optics and it must be capable of 0 μm resolution when used in vacuum contact and operating with a 400 nm exposed wavelength. The following Mask Aligner contact exposure programs are required: vacuum, hard, soft contac and proximity.

X- and Y- overlay for the maskaligner must be below 5μm.

Improvement in resolution to 0.2μm must be possible by adding 300 nm or 250 nm exposure optics or an excimer laser.

The Mask Aligner must be capable of exposing wafers and substrates up to 6mm in thickness.

Large alignment gap processing, which allows up to 300 micron gaps, with the ability to align to stored image of the alignment target must be included in the Mask Aligner. In conjunction with the large alignment gap processing a robust leveling system for accurate and reliable proximity gap setting is required.

The top side alignment microscope must have dual CCD cameras and 3 levels of magnification

The microscope scan speed must be operator adjustable without irruption of the alignment procedure.

A position reference feature that allows a single microscope objective to shift between two alignment marks in close proximity during the alignment procedure must be included within the Mask Aligner.

The exposure lamp power supply must be able to be operated in either a constant power or a constant intensity mode.

The Mask Aligner must be capable of storing 50 different processing programs.

The Mask Aligner shall include a vibration isolation table.

The Contractor shall provide on site installation and training. Finally, Complete Mask Aligner documentation shall include operating instructions schematics and spare parts list.